



U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 2

March 08, 2019

BY ELECTRONIC MAIL

Robert Law, Ph.D.
de maximis, inc.
186 Center Street, Suite 290
Clinton, New Jersey 08809

Re: Administrative Order on Consent, No. CERCLA 02-2007-2009
Diamond Alkali Superfund Site, Operable Unit 4, Lower Passaic River Study Area

Dear Dr. Law:

On October 10, 2018, the U.S. Environmental Protection Agency (EPA) directed the Cooperating Parties Group (CPG) to prepare a streamlined Feasibility Study (FS) for operable unit (OU) 4 of the Diamond Alkali Superfund Site. The FS will evaluate alternatives for a potential interim remedy (IR) for the upper nine miles of the Lower Passaic River Study Area (LPRSA) on an expedited schedule. To meet the schedule, the EPA, the CPG and New Jersey Department of Environmental Protection (NJDEP) meet on a regular basis to discuss integral decisions in the FS framework. From this point forward, the EPA, the CPG and NJDEP will be referred to as the "FS Team". A product of the meetings is a Technical Memorandum dated December 14, 2018, a copy of which is enclosed, that memorialized proposed remedial action objectives (RAOs) for the potential IR, as follows:

1. Control the sediment sources of 2,3,7,8-tetrachlorodibenzodioxin (TCDD) and total polychlorinated biphenyls (PCBs) by remediating surface sediment source areas containing elevated concentrations, thereby reducing the surface weighted average concentrations (SWACs) of 2,3,7,8-TCDD and total PCBs from river mile (RM) 8.3 to RM 15. Achieve a post-interim remedy 2,3,7,8-TCDD SWAC from RM 8.3 to RM 15 of not more than 85 parts per trillion (ppt), approximately an order of magnitude higher than the OU2 (i.e., the lower 8.3 miles of the LPRSA) 2,3,7,8-TCDD sediment remediation goal (RG) of 8.3 ppt, and achieve a post-interim remedy total PCB SWAC from RM 8.3 to RM 15 that is at or below the established total PCB background concentration of 0.46 parts per million (ppm).
2. Control subsurface sediments (sediments greater than 6 inches below the sediment bed) from becoming sources of 2,3,7,8-TCDD and total PCBs by remediating sediments between RM 8.3 and RM 15 that have a demonstrated potential for erosion to expose

subsurface concentrations above the defined subsurface remedial action levels (RALs) established for 2,3,7,8-TCDD and total PCBs.

Previously, agreement was reached within the FS Team to evaluate the following IR alternatives in the FS:

- No Further Action
- 2,3,7,8-TCDD SWAC target = 65 ppt, total PCB surface RAL = 1 ppm
- 2,3,7,8-TCDD SWAC target = 75 ppt, total PCB surface RAL = 1 ppm
- 2,3,7,8-TCDD SWAC target = 85 ppt, total PCB surface RAL = 1 ppm
- 2,3,7,8-TCDD SWAC target = 125 ppt, no total PCB surface RAL [note that this IR alternative may not meet threshold criteria but will be presented for comparative/diagnostic purposes],

Further, this letter memorializes additional decisions made by the FS Team on elements of the FS:

- A. Application of RAOs: RAO 1 will be applied first for total PCBs using a surface RAL of 1 ppm, then through hill-topping surface (0 to 6 inch) 2,3,7,8-TCDD concentrations to achieve the SWAC target for 2,3,7,8-TCDD, sequentially followed by the application of RAO 2. The surface RAL for 2,3,7,8-TCDD will be derived from the process of applying hill-topping to achieve the target 2,3,7,8-TCDD SWAC. RAO 2 will include areas:
- that are characterized as erosional
 - where there is a reasonable likelihood that erosion would expose sediments 6 or more inches below the sediment surface; and
 - where subsurface 2,3,7,8-TCDD and/or total PCB concentrations exceed the subsurface RALs.

RAO 2 will apply to any area demonstrating erosion of 6 inches or more between any two bathymetry survey pairs, using all available and appropriate bathymetry surveys.

- B. RAO 2 RALs: For the FS, the subsurface RALs will be established at a factor of two higher than the surface RALs (i.e., the total PCB surface RAL of 1 ppm, where applicable, and the 2,3,7,8-TCDD surface RAL derived through the exercise of hill-topping to achieve the target 2,3,7,8-TCDD SWAC). The FS will also evaluate, by way of a sensitivity assessment, the application of subsurface RALs set equal to the surface RALs while preserving the sequential application of RAO 1 followed by RAO 2.

In addition, the FS will incorporate an IR performance measure stating that the subsurface RALs may be no more than two times the surface RALs. Consistent with how data collected during a pre-remedial design investigation are often used to refine assumptions incorporated into the FS, if an IR is selected, the actual multiplier for the subsurface RALs will be determined in remedial design (RD) for the IR. This will be accomplished by assessing all available data, including integrating more current bathymetry and Light Detecting and Ranging (LiDAR) data into a calculation framework consistent with that provided in the CPG's January 17, 2019 RAO 2 memo (i.e., the erosion probability factor determined from the evaluation of bathymetry data).

- C. Identification of Erosional Areas: For the desktop analysis using conditional simulation maps, and for purposes of estimating remediation areas and volumes and calculating the 2,3,7,8-TCDD surface RAL and 2,3,7,8-TCDD and total PCB SWACs, erosional areas will be identified using a combination of available bathymetry data supplemented by numerical modeling predictions of erosion where bathymetry data are not available. For the FS, the currently available bathymetry data will be used in this hybrid approach. For purposes of developing numerical model simulations of IR alternatives in the FS, erosional areas will be established based on the numerical model calculated long-term erosion rate (for water years 1996 to 2010) for the upper nine miles of the LPRSA. The erosion threshold used for the numerical model will be chosen to reproduce the RAO 2 area derived from the desktop exercise. If an IR is selected, it is anticipated that for the IR RD, more current bathymetry and LiDAR data would be incorporated into the evaluation of erosional areas and to establish the design footprint.
- D. Footprint Delineation Approach: For the FS, delineation of the IR alternative footprints (for numerical model simulations) and calculation of areas and other metrics (desktop analysis) will be based on Thiessen polygons (i.e., the decision units [DUs] from the conditional simulation mapping). If an IR is selected, it is anticipated that for the IR RD, the design footprint would be delineated using a data interpolation approach based on all available data, and the footprint would be manually adjusted to ensure it optimally addresses contiguous physical features, areas of consistent grain size, and other factors.
- E. 2,3,7,8-TCDD Replacement Value: For the FS, a replacement value of 10 ppt 2,3,7,8-TCDD will be incorporated to represent conditions at the surface of remediated (i.e., dredged and capped) areas and to simulate the impact of generated residuals. If an IR is selected, for the IR RD, it is anticipated that all available data would be assessed to determine if the 10 ppt 2,3,7,8-TCDD replacement value remains appropriate or if an alternate value is appropriate for the design.
- F. Treatment of RM 10.9 Area: The 2013 removal action for the RM 10.9 area addressed the entire RM 10.9 removal action area, with the exception of: the utility corridor in the central portion of the removal action area where logistical constraints prevented dredging and/or capping at that time; and the “fingertip” area in the nearshore northern portion of the removal action area where steep slopes and/or the presence of hardened shoreline features prevented dredging and/or capping. All portions of the prior RM 10.9 removal action area, including the utility corridor and the “fingertip” area that were not previously remediated, will be incorporated into the derivation of footprints and calculation of relevant metrics for the IR alternatives in the FS and, if an IR is selected, it is expected that this area would be included in the development of the design footprint in the IR RD.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. Smith", is written below the text "Sincerely,".

Diane Salkie, Remedial Project Manager
Lower Passaic River Study Area RI/FS
Enclosure

Cc: Zizila, F. (EPA)
Sivak, M. (EPA)
Hyatt, B. (CPG)
Potter, W. (CPG)
Nickerson, J. (NJDEP)